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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,165

04/29/2005

Michael Hohne

22204-100571

9284

28886

7590

05/10/2007

CLARK HILL, P.C.

500 WOODWARD AVENUE, SUITE 3500

DETROIT, MI 48226

EXAMINER

WONG, TINA MEI SENG

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

05/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,165	HOHNE ET AL.	
	Examiner	Art Unit	
	Tina M. Wong	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is responsive to Applicant's response submitted 17 April 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent Application Publication 2003/0209655 to Wang.

In regards to claim 1, Wang discloses a multilayered sensor (Figure 4c) through which an optical waveguide (410) is passed, the optical waveguide defining a structure in which the optical waveguide is contained, the structure consisting of a front layer (471) and a rear layer (472), which transmit the external application of force directly on to the optical waveguide, the structure further including clips and ribs (471a & 472a). Furthermore, Wang teaches the clips for retaining the optical waveguide in a curved path, over each of the clip protrusions as seen in Figure 4C. But Wang fails to specifically state the ribs to retain the waveguide in a single plane. However, referring to Figure 4C, assuming the sheet of paper is the single plane, the ribs keep the waveguide pushing towards to top of the sheet of paper, which is the single plane. Therefore, although not explicitly stated, it can be observed from the Figure that the ribs and clips retain the waveguide a curved path by pushing up towards the top of the paper or pushing down towards the bottom of the paper.

In regards to claims 2 and 3, Wang discloses the optical waveguide to be arranged such that it is bent or deformed by an external application of force.

Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2003/0209655 to Wang, as applied to claim 1 above, in view of U.S. Patent 5,913,245 to Grossman.

In regards to claims 6 and 7, although Wang does not specifically disclose an adhesive layer applied to the edges of the front and rear layers, Grossman discloses a similar multi-layered sensor, deformed by a force to include an adhesive for joining together components. Furthermore, by applying an adhesive around the outside of the sensor would prevent unwanted external factors from damaging or altering the sensitive fiber and sensor. Therefore, since Wang is silent on the detail of joining the components, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have included an adhesive around the edges of the front and rear layers for the reasons indicated above.

In regards to claim 8, Wang discloses all discussed above and further discloses a first layer (layer between the waveguide and the second layer) through which the optical waveguide is passed and a second layer (471) which abuts the first layer. But Wang fails to specifically disclose the first layer to have a greater compressibility than the second layer. However, Grossman does disclose "suitable values of flexibility and compressibility can be determined by those skilled in the art by conventional engineering and development procedures." Furthermore, it would be desirable for the first layer to have a greater compressibility than the second layer since the force/pressure is applied directly to the first layer to deform the fiber in order to more easily obtain the amount of force/pressure applied. Since Wang and Grossman are both from the

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same field of endeavor, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the first layer to have a greater compressibility than the second layer.

In regards to claim 9, Wang discloses all discussed above and further discloses a third layer (472), where the first layer (layer between the waveguide and the second layer) is disposed between the second (471) and third (472) layer. But Wang fails to specifically disclose the third layer to have a lower compressibility than the first layer. However, Grossman does disclose “suitable values of flexibility and compressibility can be determined by those skilled in the art by conventional engineering and development procedures.” Furthermore, it would be desirable for the third layer to have a lower compressibility than the first layer in order to protect the waveguide from bending too far, past the bending radius of the waveguide, causing damage to the waveguide. By choosing a layer with a lower compressibility, this can be prevented. Since Wang and Grossman are both from the same field of endeavor, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the first layer to have a lower compressibility than the first layer.

In regards to claim 10, Grossman discloses the waveguide (303 & 304) to be passed through the sensor (76 & 78) at least twice. (Figure 12)

In regards to claim 11, Grossman shows (Figure 9) the optical waveguide (58) to be passed through the sensor (60 & 62) in a wave-like configuration. In Figure 9, it can be seen that the waveguide is weaved through the monofilaments and threads to form a wave-like configuration. Furthermore, Wang also shows (Figure 4c) the optical waveguide to be passed through a sensor in a wave-like configuration.

Response to Arguments

Applicant's arguments filed 17 April 2007 have been fully considered but they are not persuasive. Applicant argues the Wang structure does not teach the clips to force the waveguide to bend in one direction. However, this argument does not reflect the claim language. Although there is more than one bend taught by Wang, the claim does not state there can only be one bend. Furthermore, interpreting the "one direction" in another sense, the clip protrusions taught by Wang bend each portion of the waveguide in the same direction downward, towards the bottom of the paper.

Additionally, Applicant argues Wang does not teach the ribs to retain the waveguide in a single plane. However, the Examiner disagrees. As stated in the above rejection, referring to Figure 4C, assuming the sheet of paper is the single plane, the ribs keep the waveguide pushing towards to top of the sheet of paper, which is the single plane. Therefore, although not explicitly stated, it can be observed from the Figure that the ribs and clips retain the waveguide a curved path by pushing up towards the top of the paper or pushing down towards the bottom of the paper.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

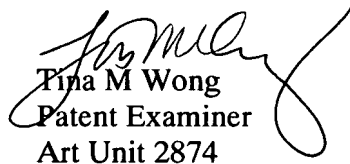
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Tina M Wong
Patent Examiner
Art Unit 2874